CLAIM OR CLAIMS

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- 1. A method of treating fibers, textiles, or leather comprising applying to fibers, textiles, or leather 0.1-15 weight percent based on the weight of the fibers, textiles, or leather of a treatment composition comprising a blend containing a silicone resin component and a fluorocarbon component; the fluorocarbon component comprising one of an emulsion containing a fluoroalkyl acrylate copolymer or an emulsion containing a fluorinated polyurethane; the silicone resin component comprising one of (i) an aminofunctional silicone resin, (ii) an emulsion containing an aminofunctional silicone resin, (iii) a carbinol functional silicone resin, (v) an epoxy functional silicone resin, or (vi) an emulsion containing an epoxy functional silicone resin.
- A method of treating fibers, textiles, or leather comprising applying to fibers, textiles, or leather 0.1-15 weight percent based on the weight of the fibers, textiles, or leather of a treatment composition comprising a blend containing a silicone resin component and a
 fluorocarbon component; the fluorocarbon component comprising at least one of an emulsion containing a fluoroalkyl acrylate copolymer or an emulsion containing a fluorinated polyurethane; the silicone resin component comprising at least one of (i) an aminofunctional silicone resin, (ii) an emulsion containing an aminofunctional silicone resin, (iii) a carbinol functional silicone resin, (iv) an emulsion containing a carbinol functional silicone resin, (v)
 an epoxy functional silicone resin, or (vi) an emulsion containing an epoxy functional silicone resin.
 - 3. A method according to Claim 1 or 2 in which the aminofunctional silicone resin comprises the units:
- 25 (i) (R₃SiO_{1/2})_a
 - (ii) $(R_2SiO_{2/2})_b$
 - (iii) (RSiO_{3/2})_c and
 - (iv) $(SiO_{4/2})_d$

where R is independently an alkyl group, an aryl group, or an aminofunctional hydrocarbon group; a is greater than zero to 0.5; b is zero to 0.4; c is greater than zero to 0.93; d is less than 0.3; and the sum of a + b + c + d is one.

4. A method according to Claim 1 or 2 in which the aminofunctional silicone resin is a resin containing units selected from the group consisting of:

- I. the units:
- (i) $((CH_3)_3SiO_{1/2})_a$
- 5 (ii) (C₆H₅(CH₃)SiO_{2/2})_b
 - (iii) ((CH₃)RSiO_{2/2})_b
 - (iv) $(C_6H_5SiO_{3/2})_c$,
 - II. the units:
 - (i) $((CH_3)_3SiO_{1/2})_a$
- 10 (ii) $((CH_3)RSiO_{2/2})_b$
 - (iii) $(RSiO_{3/2})_c$
 - (iv) $(C_6H_5SiO_{3/2})_c$,
 - III. the units:
 - (i) $((CH_3)_3SiO_{1/2})_a$
- 15 (ii) ((CH₃)RSiO_{2/2})_b
 - (iii) $(C_6H_5SiO_{3/2})_c$, and
 - V. the units:
 - (i) $((CH_3)_3SiO_{1/2})_a$
 - (ii) $(C_6H_5(CH_3)SiO_{2/2})_b$
- 20 (iii) ((CH₃)RSiO_{2/2})_b
 - (iv) $(C_6H_5SiO_{3/2})_c$
 - (v) (SiO_{4/2})_d, wherein a, b, c, and d, are as defined above, and R is -CH₂CH₂CH₂NH₂.

5. A method according to any of Claims 1 to 4 in which the carbinol functional silicone resin comprises the units:

$$(R^{1}_{3}SiO_{1/2})_{e}$$
 (i)

$$(R^2_2SiO_{2/2})_f$$
 (ii)

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$$(R^3SiO_{3/2})_g$$
 (iii) and

$$(SiO_4/2)_h$$
 (iv)

where R^1 and R^2 are independently a hydrogen atom, an alkyl group having 1-8 carbon atoms, an aryl group, a carbinol group having at least 3 carbon atoms and being free of aryl groups, or an aryl-containing carbinol group having at least 6 carbon atoms; R^3 is an alkyl group having 1-8 carbon atoms or an aryl group; e is less than 0.6; f is zero to 0.4; g is greater than zero; h is less than 0.5; the value of e + f + g + h is one; provided that when each R^2 is methyl, the value of f is less than 0.3.

- 6. A method according to any of Claims 1-4 in which the carbinol functional silicone resin is a resin containing units selected from the group consisting of:
 - I. the units:

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$$((CH_3)_3SiO_{1/2})_e$$

$$((R^2)CH_3SiO_{2/2})_f$$
where $R^2 = -(CH_2)_3C_6H_4OH$

$$((C_6H_5)CH_3SiO_{2/2})f$$
 and

20 $(C_6H_5SiO_{3/2})_g$,

II. the units:

$$((R^1)(CH_3)_2SiO_{1/2})_e \ \ \text{where} \ R^1 = -(CH_2)_3C_6H_4OH \ \ \text{and}$$

$$(C_6H_5SiO_{3/2})_g,$$

III. the units:

25 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -(CH_2)_3C_6H_4OH$ and $(CH_3SiO_{3/2})_g$,

IV. the units:

$$((R^1)(CH_3)_2SiO_{1/2})_e \ \ \text{where} \ R^1 = \text{-}(CH_2)_3OH \ \ \text{and}$$

$$(C_6H_5SiO_{3/2})_g,$$

V. the units:

$$((R^1)(CH_3)_2SiO_{1/2})_e$$
 where $R^1 = -(CH_2)_3OH$

(CH₃SiO_{3/2})_g and

 $(C_6H_5SiO_{3/2})_g$

5 VI. the units:

 $((CH_3)_3SiO_{1/2})_e$

$$((R^2)CH_3SiO_{2/2})_f$$
 where $R^2 = -(CH_2)_3OH$

 $((C_6H_5)CH_3SiO_{2/2})_f$ and

 $(C_6H_5SiO_{3/2})_g$

10 VII. the units:

 $((CH_3)_3SiO_{1/2})_e$

 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -(CH_2)_3OH$ and

 $(C_6H_5SiO_{3/2})_g$, and

VIII. the units:

15 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -CH_2CH(CH_3)CH_2OH$

 $((H)(CH_3)_2SiO_{1/2})_e$ and

 $(C_6H_5SiO_{3/2})_g$

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where e is 0.3-0.5, f is 0-0.2, g is 0.5-0.8, and h is zero..

- 7. A method according to any of Claims 1 to 6 in which the epoxy functional silicone resin comprises the units:
- (i) $(R^7_3SiO_{1/2})_i$
- (ii) $(R^{7}_{2}SiO_{2/2})_{k}$
- 25 (iii) $(R^7SiO_{3/2})_1$ and
 - (iv) $(SiO_{4/2})_{m}$.

where R^7 is independently a monovalent hydrocarbon group or an epoxyfunctional substituted hydrocarbon group having 1-18 carbon atoms; j is greater than zero to 0.6; k is zero to 0.4; l is greater than zero; and m is less than 0.3, the sum of j + k + l + m is equal to

one; provided that 0.1-30 mole percent of silicon atoms in units (i), (i), or (iii), are monovalently attached to the hydrocarbon groups containing epoxy or hydrolysis products thereof.

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- 8. A composition for treating fibers, textiles, or leather comprising a blend containing a silicone resin component and a fluorocarbon component; the fluorocarbon component comprising one of an emulsion containing a fluoroalkyl acrylate copolymer, or an emulsion containing a fluorinated polyurethane; the silicone resin component comprising one of (i) an aminofunctional silicone resin, (ii) an emulsion containing an aminofunctional silicone resin,
 (iii) a carbinol functional silicone resin, (iv) an emulsion containing a carbinol functional silicone resin, (v) an epoxy functional silicone resin, or (vi) an emulsion containing an epoxy functional silicone resin.
- 9. A composition for treating fibers, textiles, or leather comprising a blend containing a silicone resin component and a fluorocarbon component; the fluorocarbon component comprising at least one of an emulsion containing a fluoroalkyl acrylate copolymer or an emulsion containing a fluorinated polyurethane; the silicone resin component comprising at least one of (i) an aminofunctional silicone resin, (ii) an emulsion containing an aminofunctional silicone resin, (iii) a carbinol functional silicone resin, (iv) an emulsion containing a carbinol functional silicone resin, (v) an epoxy functional silicone resin, or (vi) an emulsion containing an epoxy functional silicone resin.

- 10. A composition according to Claim 8 or 9 in which the aminofunctional silicone resin comprises the units:
- (i) $(R_3SiO_{1/2})_a$
- (ii) $(R_2SiO_{2/2})_b$
- 5 (iii) $(RSiO_{3/2})_c$ and
 - (iv) $(SiO_{4/2})_d$

where R is independently an alkyl group, an aryl group, or an aminofunctional hydrocarbon group; a is greater than zero to 0.4; b is zero to 0.4; c is greater than zero to 0.93; d is less than 0.3; and the sum of a + b + c + d is one.

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- 11. A composition according to Claim 8 or 9 in which the aminofunctional silicone resin is a resin containing units selected from the group consisting of:
- I. the units:
- (i) $((CH_3)_3SiO_{1/2})_a$
- 15 (ii) $(C_6H_5(CH_3)SiO_{2/2})_b$
 - (iii) $((CH_3)RSiO_{2/2})_b$
 - (iv) $(C_6H_5SiO_{3/2})_c$,
 - II. the units:
 - (i) $((CH_3)_3SiO_{1/2})_a$
- 20 (ii) ((CH₃)RSiO_{2/2})_b
 - (iii) $(RSiO_{3/2})_c$
 - (iv) $(C_6H_5SiO_{3/2})_c$,
 - III. the units:
 - (i) $((CH_3)_3SiO_{1/2})_a$
- 25 (ii) ((CH₃)RSiO_{2/2})_b
 - (iii) $(C_6H_5SiO_3/2)_c$, and
 - IV. the units:
 - (i) $((CH_3)_3SiO_{1/2})_a$
 - (ii) (C₆H₅(CH₃)SiO_{2/2})_b
- 30 (iii) ((CH₃)RSiO_{2/2})_b

- (iv) $(C_6H_5SiO_{3/2})_c$
- (v) (SiO_{4/2})_d; wherein a, b, c, and d, are as defined above, and R is -CH₂CH₂CH₂NH₂.
- 12. A composition according to any of Claims 8-11 in which the carbinol functional siliconeresin comprises the units:

$$(R^{1}_{3}SiO_{1/2})_{e}$$
 (i)

$$(R^2_2SiO_{2/2})_{\mathbf{f}}$$
 (ii)

$$(R^3SiO_{3/2})_g$$
 (iii) and

$$(SiO_4/2)_h$$
 (iv)

- where R¹ and R² are independently a hydrogen atom, an alkyl group having 1-8 carbon atoms, an aryl group, a carbinol group having at least 3 carbon atoms and being free of aryl groups, or an aryl-containing carbinol group having at least 6 carbon atoms; R³ is an alkyl group having 1-8 carbon atoms or an aryl group; e is less than 0.6; f is zero to 0.4; g is greater than zero; h is less than 0.5; the value of e + f + g + h is one; provided that when each R² is methyl, the value of f is less than 0.3.
 - 13. A composition according to any of Claims 8-11 in which the carbinol functional silicone resin is a resin containing units selected from the group consisting of:
 - I. the units:

$$((R^2)CH_3SiO_{2/2})_{f}$$
where $R^2 = -(CH_2)_3C_6H_4OH$

$$((C_6H_5)CH_3SiO_{2/2})f$$
 and

$$(C_6H_5SiO_{3/2})_g$$
,

II. the units:

25 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -(CH_2)_3C_6H_4OH$ and

$$(C_6H_5SiO_{3/2})_g$$

III. the units:

$$((R^1)(CH_3)_2SiO_{1/2})_e$$
 where $R^1 = -(CH_2)_3C_6H_4OH$ and $(CH_3SiO_{3/2})_g$,

IV. the units:

 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -(CH_2)_3OH$ and

 $(C_6H_5SiO_{3/2})_g$,

V. the units:

5 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -(CH_2)_3OH$

(CH₃SiO_{3/2})_g and

 $(C_6H_5SiO_{3/2})_g$,

VI. the units:

 $((CH_3)_3SiO_{1/2})_e$

10 $((R^2)CH_3SiO_{2/2})_f$ where $R^2 = -(CH_2)_3OH$

 $((C_6H_5)CH_3SiO_2/2)_f$ and

 $(C_6H_5SiO_{3/2})_g$,

VII. the units:

 $((CH_3)_3SiO_{1/2})_e$

15 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -(CH_2)_3OH$ and

 $(C_6H_5SiO_{3/2})_g$, and

VIII. the units:

 $((R^1)(CH_3)_2SiO_{1/2})_e$ where $R^1 = -CH_2CH(CH_3)CH_2OH$

 $((H)(CH_3)_2SiO_{1/2})_e$ and

20 $(C_6H_5SiO_{3/2})_g$,

where e is 0.3-0.5, f is 0-0.2, g is 0.5-0.8, and h is zero.

- 14. A composition according to any of Claims 8-13 in which the epoxy functional silicone resin comprises the units:
- 25 (i) $(R^{7}_{3}SiO_{1/2})_{j}$
 - (ii) $(R^7_2 SiO_{2/2})_k$
 - (iii) $(R^7SiO_{3/2})_1$ and
 - (iv) $(SiO_{4/2})_m$.

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where R^7 is independently a monovalent hydrocarbon group or an epoxyfunctional substituted hydrocarbon group having 1-18 carbon atoms; j is greater than zero to 0.6; k is zero to 0.4; l is greater than zero; and m is less than 0, the sum of j + k + l + m is equal to one; provided that 0.1-30 mole percent of silicon atoms in units (i), (i), or (iii), are monovalently attached to the hydrocarbon groups containing epoxy or hydrolysis products thereof.

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